UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
Facultatea de Agricultură
Calea Mănăştur 3-5, 400372, Cluj-Napoca, România
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No._____of _____

USAMV form 0102040108 (discipline code)

SUBJECT OUTLINE

1. Information on the programme

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	II Plant culture
1.4. Field of study	Agronomy
1.5. Cycle of study[1]	License
1.6. Specialization/ Study programme	Montanology
1.7. Form of education	IF

2. Information on the discipline

2.1. Discipline name	Fodder crops							
2.2. Course coordinator				Pleşa Anca-Dorina				
2.3. Seminar/ laboratory/ project coordinator				Pleşa Anca-Dorina				
2.4. Year of study	IV	2.5. Semester	I	2.6. Evaluation type	Summative	2.7. Discipline status	Content[2]	DS
							Compulsoriness[3]	DI

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	**4**	**out of which: 3.2. lecture**	**2**	**3.3. seminar/ laboratory/ project**	**2**
3.4.Total number of hours in the curriculum	**56**	**out of which: 3.5. lecture**	**28**	**3.6.seminar/laboratory**	**28**

Distribution of the time allotted	hours
3.4.1. Study based on books, textbooks, bibliography and notes	20
3.4.2. Additional documentation in the library, electronic platforms and field experiences	25
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays	20
3.4.4. Tutorials	10
3.4.5. Examinations	19
3.4.6. Other activities	

3.7. Total hours of individual study	94
3.8. Total hours per semester	150
3.9. Number of credits[4]	5

4. Prerequisites (if applicable)

4.1. curriculum-related	Physiology, Biochemistry, Genetics, Pedology, Agrochemistry
4.2. skills-related	The student must have knowledge about the biological particularities of the crop forage plants, the requirements regarding the climate and soil and the systematics and continuing with the technological particularities of each species.

5. Conditions (if applicable)

5.1. for the course	The course is interactive and students have the opportunity to ask questions regarding the content of the exhibition. The university discipline requires the observance of the start and end time of the course.
5.2. for the seminar/ laboratory/ project	In practical work it is mandatory to consult the practical tutor, each student will carry out an individual activity with the laboratory materials provided and described in the practical work tutor. Academic discipline is imposed throughout the duration of the work.

6. Cumulated specific competences

Professional competences	To know the specific language for the Forage Cultures discipline. To understand the role of forage crops in the context of current agriculture. To know the main cultivated fodder plants. To acquire the technology of culture of annual and perennial poisons. To acquire the culture technology of annual and perennial fodder. To know the technological requirements of the culture of potatoes and fodder for seed. To acquire the technology of cultivating the roots and cucurbit and fodder crucifers. To know the technology of successive forage crops. To acquire the knowledge necessary to produce a green conveyor. To learn the technology of feed silage.
Transversal competences	To demonstrate the ability to recognize the seeds and the biology of the forage species. Be able to develop projects regarding the establishment of forage crops with plants adapted to the specific conditions in each area. To be able to think about scientific activities regarding the extension and taking into cultivation of new assortments of fodder plants. To demonstrate concerns about professional development by training in crop optimization investigations to obtain quality feed. To participate in the research activities in the laboratory and field of experience of the discipline.

7. Discipline objectives (based on the cumulated specific competences)

7.1. General objective	To acquire the knowledge regarding the fundamental concepts of the forage culture together with the knowledge of the biology of the main groups of forage plants at the level of the current requirements.
7.2. Specific objectives	To understand the distribution of fodder plants at the level of culture areas in our country and globally. To be able to identify the main forage species and to evaluate the quantitative and qualitative parameters of the forage obtained according to the crop areas. To know the factors that influence the obtaining of quality feed and the interrelationships between them and the crop plants.

8. Content

8.1. COURSE **Number of hours -28**	Teaching methods	Observation
Culture of perennial seeds for seed. Characterization of the main species: English radish, snails, gnats, orchard meadows, tall meadows, red meadows, unripe mites, crested pears, thymophics. Biology of flowering in perennial grasses.	Lecture	1 lecture
Perennial fodder culture. Alfalfa. Importance, requirements for climate and soil, systematics, culture for fodder and culture for seed.		1 lecture
Perennial fodder culture. The red clover. Importance, requirements for climate and soil, systematics, culture for fodder and culture for seed.		1 lecture
Perennial fodder culture. *Onobrychis viciifolia*. Importance, requirements for climate and soil, systematics, culture for fodder and culture for seed. *Lotus corniculatus*. Importance, requirements for climate and soil, systematics, culture for fodder and culture for seed.		1 lecture
The annual fabaceea culture. The fodder peas. Importance, requirements for climate and soil, systematics, forage culture. Fodder peas. Importance, requirements for climate and soil, systematics, forage culture. Soybean for feed.		1 lecture
Culture of annual fodder. Cultivation of corn for silo. Particularities: importance, choice of land, choice of hybrids, sowing and sowing, densities, fertilization, harvest time, productions. Corn cultivation for green table. Particularities: importance, choice of land, choice of hybrids, sowing and sowing, densities, fertilization, harvest time, productions.		1 lecture
Culture of annual fodder poaches. Fodder sorghum. Importance, requirements for climate and soil, systematics, forage culture. Sudan grass. Importance, requirements for climate and soil, systematics, forage culture. The ray. Importance, requirements for climate and soil, systematics, forage culture.		1 lecture
Rye and barley for green fooder. Importance and technological peculiarities.		
The culture of the fodder roots. Fodder beet. Importance, requirements for climate and soil, systematics, forage culture. *Brassica oleraceae* fodder. Importance, requirements for climate and soil, systematics, forage culture. Fodder carrot. Importance, requirements for climate and soil, systematics, forage culture.		1 lecture

The cucurbit forages. Importance, requirements for climate and soil, systematics, forage culture.		1 lecture
Fodder crucifiers. Feed rape. Importance, requirements for climate and soil, systematics, forage culture. Fodder cabbage. Importance, requirements for climate and soil, systematics, forage culture.		1 lecture
Successive forage crops. Conditions regarding climate and soil, assortment of plants, technological peculiarities.		1 lecture
The green conveyor. Types of conveyor, assortment of plants, drawing of the conveyor scheme.		1 lecture
Feed silage. The importance of silage. Categories of silage feed.		1 lecture
Feed silage. Biochemical processes that occur during silage. Use of additives. Silo types and the quality of silage feed.		1 lecture

8.2. PRACTICAL WORKS **Number of hours – 28**	Teaching methods	Observation
Melons feed. Species biology and seed recognition.	Theoretical presentation of practical works	1 laboratory +1 field work
Root fodder. Species biology and seed recognition.		1 laboratory work
Biology of flowering in poaceae, cultivated fodder poaceae.		1 field work
Biology of flowering in fabaceae.		1 field work
Grass and root crops fodder set up on farms.		1 field work
Crops of poaceae and fabaceae set up on farms.		1 field work
The silo.		1 laboratory work
Determination of the volume of stored feed.		1 field work
Analysis of hay needs.		1 laboratory work
Determining the quality of a hay sample.		1 field work
Preparation of mixtures - project.		1 laboratory work
Project support.		2 laboratory work

Compulsory bibliography:
1. COURSE NOTES.
2. Pacurar F., Rotar I (2014) Methods of study and interpretation of the meadow vegetation, Risoprint, Romania
3. Rotar Ioan, Vidican Roxana, Sima Nicuşor, 2009 - Culture of grasslands and fodder plants - practical works, Risoprint Publishing House, Cluj-Napoca
4. Vidican Roxana, 2003- Practice, Poliam Publishing House, Cluj Napoca

Optional bibliography:
1. Rotar I. and L. Carlier (2010) Grassland Culture, Risoprint Publishing House, Cluj-Napoca, Romania

9. Corroborating the discipline content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field

In order to identify ways of modernization and continuous improvement of the teaching and the content of the courses, with the most current topics and practical problems, the teachers participate in the Symposium organized by the Universities of Agricultural Sciences and Veterinary Medicine of the country, Symposiums in the areas of interest organized by Universities from the country and abroad, the annual meeting of the Romanian Society of Peasants and other Societies with activity in the fields of interest where they meet with the farmers, being debated current and perspective aspects of the dynamics of forage crops in Romania and Europe.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	Knowledge of the importance and technology of the culture for fodder and seed of annual and perennial poaceae.	summative(E)	10%
	Knowledge of the importance and technology of the culture for feed and seed of annual and perennial plants.		10%
	Knowledge of the importance and technology of fodder root culture.		10%
	Knowledge of the importance and technology of fodder root culture.		10%
	Knowledge of the importance and technology of forage cucumber culture		5%
	Knowledge of the importance and technology of fodder crucifer culture.		5%
	Mastering the technological peculiarities of successive forage crops.		10%

	Acquiring knowledge of forage silage, biochemical processes that occur during silage, types and quality of silage.		10%
10.5. Seminar/Laboratory	Knowledge of the species biology and recognition of the seeds of fodder cultivated. Knowledge of species biology and recognition of cultivated fodder seeds. Knowledge of species biology and recognition of cultivated fodder grass seeds. Knowledge of the biology of the species and recognition of the seeds of legumes grown. Acquiring the techniques for determining the volume of the stored feeds and analyzing their quality. Deepening and synthesizing the knowledge gained by drawing up projects on specific seed mixtures.	continuous(VP)	5% 5% 5% 5% 5% 5%
10.6. Minimum performance standards			
Mastering scientific information transmitted by lectures and practical at an acceptable level. Obtaining the passing grade for on-the-spot checks is an essential condition for promotion.			

[1] Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.

[2] according to the educational plan

[3] Discipline status (compulsoriness) - choose one of the options – **DI** (compulsory discipline) **DO** (optional discipline) **DFac** (facultative discipline).

[4] One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on
04.09.2019

Course coordinator
Pleșa Anca-Dorina

Laboratory work/seminar coordinator
Pleșa Anca-Dorina

Approved by the department on
05.09.2019

Head of the Department